

REMARKS

This Amendment is submitted together with an RCE in response to the Advisory Action mailed January 13, 2003. Claims 13-18 were added in a previous amendment, but not entered by the Examiner; Applicant requests entry of these claims. New claims 19-21 are added herein. All amendments find support in the specification, drawings and original claims. Claims 13-21 remain pending in the application. Applicants respectfully request reconsideration and allowance of all pending claims in view of the above amendments and the following remarks.

Rejections Under 35 U.S.C. § 103

In the final Office Action, the Examiner rejected claims 7-12 under 35 U.S.C. § 103(a) as obvious in view of, and therefore unpatentable over, various combinations of three references: U.S. Patent No. 5,394,054 to Chen ("Chen"), U.S. Patent No. 5,990,610 to Matsumoto et al ("Matsumoto"), and U.S. Patent No. 5,077,498 to Odenthal ("Odenthal"). In the Advisory Action, the Examiner repeated the same rejections using the same references.

According to the Examiner, Chen discloses a cathode ray tube 78 comprising a neck portion, a funnel portion, a plurality of conductive stem pins 36 at the end of the neck portion, and an electron gun 60 positioned in the neck. The Examiner asserts that the electron gun 60 includes a triode for forming the electron beam 73 and a plurality of electrodes (grids G3, G4, and G5) for focusing electron beam, with the second accelerator electrode (G3 grid 68) being a cylindrical element smaller in diameter than the neck and connected to anode potential V_A ; the focus electrode (G4 grid 70) being coupled to and charged by a focus voltage V_F , where V_F is less than V_A ; and the final accelerator electrode (G5 grid 72) comprising a conductive coating 46 disposed on the inner surface of the neck and funnel of the glass envelope connected to a high anode voltage V_A via the anode stem pin.

Chen discloses the claimed invention, except for the focus electrode connected to a low voltage stem pin and the accelerator electrode connected to an isolated stem pin. According to the Examiner, however, Matsumoto discloses that a plurality of stem pins can include a high voltage stem pin 3B and several lower voltage stem pins 3A and 3C. The Examiner concludes it would have been obvious to one having ordinary skill in the art at the time of the invention to connect the accelerating electrode to high V_A through the isolated high voltage stem pin, and the focusing electrode to a focus voltage V_F through the low voltage stem pin.

Finally, according to the Examiner, Odenthal discloses that the high voltage potential should be equal to 12 kilovolts. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to specify the anode potential of the CRT of Chen equal to 12 kilovolts, as suggested by Odenthal.

As to claim 12, the Examiner asserts that Chen and Matsumoto disclose all the claim limitations except the second and the accelerator electrode being connected to an anode potential of 12 kilovolts. However, the Examiner asserts that Odenthal discloses that the second electrode and the accelerating electrode should be connected to a 12 kilovolt source through an anode button for focusing the electron beam with reduced spherical aberration. The Examiner concludes that it would have been obvious to include the anode potential of 12 kilovolts as disclosed by Odenthal for focusing the electron beam towards the target.

Applicant respectfully traverses the Examiner's rejections. To establish a *prima facie* case of obviousness, three criteria must be met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As further explained below, the Examiner has not established a *prima facie* case of obviousness because criteria (1) and (2) have not been met.

New claim 13 recites a CRT comprising, among other things, "a first lens comprising a second accelerator electrode including a conductive cylindrical element smaller in diameter than the neck, which is connected to an external potential via the isolated high voltage stem pin, and a focus electrode connected to a focus potential through one of the low voltage stem pins" and "a second lens comprising the focus electrode and a final accelerator electrode comprising a electrode is connected to anode potential through an anode button in the neck."

Contrary to the Examiner's assertion, Chen and Matsumoto do not, jointly or individually, disclose, teach or suggest an apparatus with these limitations. Chen teaches that the G3 grid 68 is kept at anode potential V_A , the G4 grid 70 is kept at focus potential V_F , and the G5 grid is kept at anode potential V_A . Since focusing relies on differences in potential, after the beam 73 leaves the triode, the beam is focused first between the G3 grid 68 and the G4 grid 70, and again between the G4 grid 70 and the G5 grid 72. In other words, the difference in potential

between the G3 grid 68 and the G4 grid 70 forms a first lens, and the difference in potential between the G4 grid 70 and the G5 grid 72 forms a second lens. Chen discloses that the internal coating 46 is kept at the anode voltage V_A (col. 2, lines 32-34)—that is, the same voltage as the G5 grid 72. Because there is no potential difference between the G5 grid 72 and the conductive coating 46, there can be no focusing between the G5 grid and the conductive coating, and the combination of these elements cannot be considered a lens. Hence, the CRT of Chen cannot be considered a combination including “a second lens comprising the focus electrode and a final accelerator electrode comprising a continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck.” Matsumoto discloses only a particular way of arranging pins in a connector and makes a suggestion to try the arrangement in a CRT, but it discloses nothing related to how focusing is carried out in an einzel focusing lens, nor how electrodes and grids should be arranged therein. Thus, Chen and Matsumoto taken together cannot disclose, teach or suggest all the limitations in the claim.

In addition to failing to disclose every element and limitation, neither Chen nor Matsumoto teaches, suggests, or otherwise motivates the combination attempted by the Examiner; in fact, Chen teaches away from the present invention. Chen does not teach the claimed invention because it includes no suggestion that the conductive coating 46 is or can be used for any purpose relating to the focusing of the electron beam 73. Chen teaches that all focusing of the electron beam 73 is done by the G3 grid 68, the G4 grid 70, and the G5 grid 72. Chen teaches away from the claimed invention because it teaches that the conductive coating 46 should at the same anode potential V_A as the G5 grid 72 (Fig. 3; col. 4, lines 61-65), meaning that there is no potential difference between the G5 grid 72 and the conductive coating 46, and that these two elements cannot therefore form a lens or perform any focusing. As discussed above, Matsumoto discloses only a particular way of arranging pins in a connector; nothing in Matsumoto is related to how focusing is carried out in an einzel focusing lens, and thus Matsumoto cannot suggest anything relating to the particular use of electrodes within a CRT. Thus, the combination of Chen and Matsumoto cannot suggest the combination attempted by the Examiner and therefore cannot teach, suggest, or otherwise motivate a combination including “a second lens comprising the focus electrode and a final accelerator electrode comprising a

continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck."

Regarding claims 14 and 15, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 13 is in condition for allowance. Applicant therefore respectfully submits that claims 14 and 15 are allowable by virtue of their dependence on allowable claim 13, as well as by virtue of the features recited therein. Applicant thus respectfully requests withdrawal of the rejections and allowance of these claims.

New claims 16 and 18 both recite a CRT comprising, among other things, "a first lens comprising a second accelerator electrode including a conductive cylindrical element smaller in diameter than the neck, which is connected to an anode potential via the isolated high voltage stem pin, and a focus electrode connected to a focus potential through one of the low voltage stem pins," and "a second lens comprising the focus electrode and a final accelerator electrode comprising a continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck." As discussed above in connection with claim 13, none of the references relied upon in this Office Action teaches this limitation. Moreover, the references, whether taken alone or in combination, do not suggest, and in fact teach away from, the combination attempted by the Examiner. For these reasons, Applicant respectfully submits that claims 16 and 18 are in condition for allowance, and requests withdrawal of the rejection and allowance of the claims.

Regarding claim 17, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 therefore respectfully submits that claim 17 is allowable by virtue of its dependence on allowable claim 16, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of this claim.

New claim 19 recites an einzel focusing lens comprising, among other things, "a first lens comprising a second accelerator electrode including a conductive cylindrical element smaller in diameter than the neck, which is connected to an external potential via an isolated high voltage stem pin, and a focus electrode connected to a focus potential through a low voltage stem pin"

and "a second lens comprising the focus electrode and a final accelerator electrode comprising a continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck." As discussed above in connection with claim 13, none of the references relied upon by the Examiner teaches this limitation. Moreover, the references, whether taken alone or in combination, do not suggest, and in fact teach away from, the combination attempted by the Examiner. For these reasons, Applicant respectfully submits that claim 19 is in condition for allowance, and requests withdrawal of the rejection and allowance of the claim.

Regarding claims 20 and 21, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 19 is in condition for allowance. Applicant therefore respectfully submits that claims 20 and 21 are allowable by virtue of their dependence on allowable claim 19, as well as by virtue of the features recited therein. Applicant thus respectfully requests withdrawal of the rejections and allowance of these claims.

Conclusion

Applicant respectfully requests reconsideration of the application in view of the above amendments and remarks. None of the cited references, alone or in any motivated combination, disclose, teach, or suggest what is recited in the independent claims. Thus, the independent claims are in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

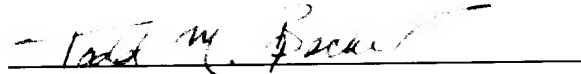
If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the claims of this application, Applicant respectfully requests that the Examiner inform the undersigned attorney of such teaching. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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